PJM Risk Management: Updated Recommendations

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Background

In 2010, PJM submitted revisions to its Tariff and Operating Agreement that were necessary to establish a new entity, PJM Settlement, as counterparty to transactions in PJM's markets. Specifically, the revisions established PJM as the counterparty to Market Participants and customers for transmission and ancillary services transactions, purchases and sales of capacity, purchases and sales of Financial Transmission Rights (FTRs) in FTR auctions, and the contractual rights and obligations of holders of FTRs and Auction Revenue Rights (ARRs).

FERC approved the creation of PJM Settlement, and since January 2011, PJM has functioned as the counterparty and assumed certain billing and settlement functions, not only for FTRs, but for all PJM-operated markets. That function is known in the forward markets as a central counterparty, often called a clearing house.

Under this structure, any default amounts not covered by collateral are socialized across all remaining market participants. As a result, the participants in each market provide mutual assurance to the participants in all other markets.

PJM's Financial Risk Mitigation Senior Task Force (FRMSTF) has worked to put effective controls in place to further mitigate the risk of participants defaulting like PJM experienced in 2008 and 2018.

Although PJM's Tariff and Operating Agreement were successfully overhauled in 2020 as they relate to risk, PJM decided to again extend the senior task force's work, adding a Phase II to continue to refine modeling and build stakeholder trust.

Current Work

The FRMSTF's primary focus over the past year was on establishing PJM's initial margin methodology.

PJM found flaws in its initial data. To fix this, PJM worked with many stakeholders who challenged PJM to think about things differently and/or think about ways PJM can improve its initial margin model. PJM is grateful for that feedback. Ultimately, by using back testing, PJM was able to evidence that the model produced rational results and was transparent in presenting those results and other statistics that were requested.

While PJM and the FRMSTF have made some great improvements in PJM's risk management framework, and although the FRMSTF has drawn to a close, there is still work to be done. PJM's markets and policies must be continually assessed to find gaps and propose enhancements to ensure that risks are appropriately captured.

This work will continue in PJM's Risk Management Committee, which was established as a means to do just that.

Collateral Risk

PJM has never alluded that the initial margin would mitigate all collateral risk. PJM does believe, however, that enhancing initial and bid margining methodologies, along with continually refining risk policies, will provide additional risk coverage. Each mitigation strategy is not intended to work alone or in a silo. They are intended to work in concert with each other.

Ongoing Enhancements

The FRMSTF previously considered adding credit default insurance products as another tool to protect against residual risk. (Residual risks are those that cannot be fully mitigated or controlled.)

PJM is currently in discussion with insurance underwriters about the senior task force and ongoing changes, specifically around initial margining. Assuming that initial margining is in place, PJM could potentially add credit default insurance products to its risk management tools.

PJM will continue to make enhancements to its model. Back testing and stress testing will take place on a periodic and ongoing basis. As more auctions occur, more data will become available, which will allow PJM to move from a standard deviation approach in its model to a percentile approach.

The Risk Management Committee will also continue to address important issues and risks as they arise.

Responding to Stakeholder Feedback

PJM has had recent feedback that included requests for data, including statistics on hedgers versus speculators.

Some stakeholders have said that the collateral for companies that are truly hedging around assets are unfairly increasing, while others have said that collateral increases for companies that are looking to arbitrage are unfairly increasing. Some have concluded that the amount of overall collateral being reduced may indicate that PJM is not collecting enough collateral from participants.

Cataloging Company Types

There is no easy answer to cataloging company types.

In order to catalog company types, PJM would need to define new terms and ask companies to identify themselves correctly and potentially segregate their books (using the commercial term for trading portfolios, between what is a hedge and what is not). It appears that most books/accounts are set up for accounting purposes and/or margin recognition.

PJM cannot disclose that information, and more importantly, the way PJM members have identified themselves into segments does not necessarily comport with how they actually operate in the PJM footprint.

Examples

A casual observer might expect that only financial companies would be found under PJM's Other Supplier membership category. However, there are also generators that have also identified themselves as Other Suppliers.

PJM has also been asked about "small" financial players, which raises different questions, including how "small" is defined. When do they become a "medium" or "large" financial player? The reality is that "financial player" is not even a defined term for PJM.

These are things that must continue to be worked through in the Risk Management Committee.

Collateral

PJM has also received feedback regarding lower/higher collateral amounts and the conclusions that have been drawn from those.

It should be expected that overall collateral will increase or decrease depending on a few factors:

- Seasonality
- Position mix between nearer term and longer term
- Buys versus sales

It is also important to note that hedges are not always beneficial. There can be losses from hedging strategies as well, as the intent of the hedge is to mitigate margin erosion.

PJM is also now recommending a net-positive exposure against collateral amounts. Historically, PJM only applied negative exposure. With this recommendation, this means that at any point in time the collateral amounts can/will change.

With regard to various participants arguing that being in a certain book of business (speculating or hedging) unfairly increases collateral and/or creates a barrier, PJM can say with certainty that there have been decreases/increases across different types of counterparties, and there is no skewing of the data.

The ultimate goal for this phase of the FRMSTF is to bring forward industry standard concepts, and this is definitely one.

Recommended Confidence Intervals

PJM is recommending that it utilize a confidence interval of 97% rather than the industry standard of 99% for initial margin calculations.

Background

During the financial crisis of 2007 and ultimate defaults that occurred in 2008, it was determined that the financial and commodity exchange industry's use of 95% as a confidence interval did not provide the appropriate coverage. Industry leaders and regulators such as the Basel Committee for Banking Supervision, the International Organization of Securities Commissions, the International Swaps and Derivatives Association, and the CFTC have recommended initial margin calculations at a 99% confidence level.

Financial institutions and exchanges are already there. For example, Nodal Exchange calibrates at a 99.7% confidence level.

Are FTRs Unique?

FTRs are unique only in that the market is administered by a regional transmission organization.

Otherwise, an FTR is simply a forward contract for the price differential (or, more precisely, the congestion component of the price) between two defined locations. In that sense, it is a classic "basis swap," where the "fixed" price is the purchase price in the auction, and the "floating" reference price is the price differential in the Day-Ahead Market between the two specified locations. Basis swaps are not unique instruments.

Why Not the Industry Standard?

The industry standard confidence interval for financial transactions is 99%, which PJM can achieve in time. However, PJM's FTR auction history is limited, and as PJM has more auctions and captures more data, it will be able to further enhance its model.

Additionally, PJM is supposed to administer the market and be independent. While individual companies may employ strategies that have a less conservative Value at Risk (VaR) or risk-based model to capture revenues related to price volatility, it is PJM's perspective that it should be conservative. PJM believes that 97% meets that requirement today.

The proposed methodology with a 97% confidence interval strikes the right balance and is one that:

- Realigns collateral requirement from market participants commensurate with the risk in their portfolio such that it increases for riskier portfolios and is reduced for less risky, more balanced portfolios
- Communicates that PJM is concerned with tail risk and aims to mitigate as much of it as possible

Conclusion

Leveraging the missteps in other financial markets and PJM's own have taught us that inadequate risk management policies and procedures at the market host, or within any market participant, have serious consequences. Those inadequacies can lead to market shocks from defaults or fraudulent conduct on the part of counterparties, precipitating declines in liquidity that put the market at risk or obstruct its growth. It is critical that PJM members appreciate those well-established consequences of inadequate risk management practices and move to put forth PJM's recommendations.